OS Topics

Module 1

1. OS functions:
    - Process Management
    - Memory Management
    - File System Management
    - Device Management
    - Security and Access Control
    - User Interface
    - Networking
    - Resource Allocation and Management
2. Software:
    - Collection of Programs, Instructions and Data
    - To perform specific Tasks
3. Application Software vs System Software

Aspect	Application Software	System Software
Purpose	Directly Perform Specific Tasks for the user	Operate and Manage resources for the System
Dependency	Dependent on System Software	Independent of Application Software
Examples	Word, Excel, Chrome, Photoshop	Windows, MacOS, Linux, Drivers

5. Assembler:
    - Translates Assembly code to Machine code
6. Compiler:
    - Translates High level langugues into either Assembly code or Directly to Machine code
7. Interpreter:
    - Directly executes code
    - Line by line translation of code
    - Complied to bytecode sometimes

Module 2

1. Process
2. Process Management
3. Process Control Block Structure (Diagram)

4. States of Process (Diagram)
5. CPU Schedulers
6. Scheduling Algorithms (Diagram)
7. Resource Allocation (Graph)
8. Deadlock
9. Process Synchronization

Module 3

1. Memory Management
2. Memory Management Schemes
3. Memory Management Techniques
4. Memory Allocation Strategies
5. Address Binding Schemes
6. Page Replacement Algorithms

Module 4

1. File System
2. File Operations
3. Types of File Organizations
4. File Organization Algorithm
5. Disk Scheduling Algorithm
6. Classify Directory Structures
7. File Allocation Methods